



THOMAS G. NEWMAN,
EDITOR.

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EDITORIAL BUZZINGS.

May Flowers are coming.
The bees are humming,
And the small boy hankers for early fruit;
The skies are bluer,
The gales are fewer,
And the damsel is trimming her bathing suit.

Thomas Gavin, of Warburton, Ont., is dead. He was 31 years of age, and his death was caused by diabetes. He was one of our subscribers, and was an enthusiastic lover of bees.

We Regret to learn that Mr. A. J. Hatfield, of South Bend, Ind., unfortunately broke his leg last fall, and is now only able to get along with one crutch, but expects to be able to dispense with that soon.

Golden Bees.—Mr. W. P. Henderson has sent to us from his Tennessee apiary, some of the brightest yellow bees we ever saw. In fact, the black or dark is barely enough to discern. They are as yellow as the yellowest queens, and when on the wing, look much like bright yellow queens. They are docile, and Mr. Henderson says, they are fine workers, even if they are so grandly dressed.

Is He Reliable?—We often receive a postal card containing something like this: I want to ship some potatoes, berries, eggs, honey, chickens, fruit, or some other produce, and, naming some person, the question is asked, "Is he reliable?" or "Is it safe for me to ship to him?" Now while we desire to accommodate our friends, still it is quite a task to lay on us to answer such questions. The better way would be for those interested to step into a home Bank, and have the banker look them up, through Bradstreet's or Dunn's commercial agencies.

Saved by the Union.—How often, when requested to join "The National Bee-Keepers' Union," will some one ask, "What good will it do me?" The very fact of belonging to such an organization is of itself not only an honor, but also a power in the defensive! If a jealous or prejudiced neighbor finds that a bee-keeper belongs to a "Union" for the defense of the pursuit—he will think twice before rushing into a lawsuit.

Here is a case in point, and an excellent illustration of the moral effect of being a member of the Union: Rev. Robert Carver, of Manton, Mich., a member of the National Bee-Keepers' Union, wrote to the Manager that he was sued by a jealous neighbor to appear before a prejudiced Justice of the Peace, for maintaining a nuisance. The damage was placed at \$100 for trespassing bees. Threats were made to drive him and his bees out of the village.

As Manager of the National Bee-Keepers' Union, we counseled him as to what to do and how to proceed; told him to hire a good lawyer, and assured him that the Union would stand by him as long as he was in the right, and defend his rights in a moral as well as a financial way.

The case was called, and an adjournment was made until April 29. Mr. Carver retained a lawyer, showed him the letter, and also the published "Reports" of the "Union." He read the latter carefully, went down town and talked with the opposite attorney, and some of those incensed against the bees. The result was that they were quite willing to compromise the affair.

By mutual agreement the bees were to be moved a few rods from the road, and the suit dropped, leaving the parties who brought suit to pay all costs.

Mr. Carver writes as follows: "A friend of mine happened in, when several of them were talking about the matter, and he heard the village marshal say to them that if they went on with the case, they would have all the bee-fraternity to fight, and would have their hands full."

This is another triumph for the Union. The counsel of its Manager, and the moral effect of being a member of an organization for the defense of the pursuit—caused the prosecuting party to withdraw from the field and pay all the costs!

Will our friends please chalk up another victory for the Union!

Uncapping-Knife.—A person signing himself "Inventor," asks if all bee-keepers are "satisfied with somebody's uncapping-knife, or is there a demand for a simply-constructed, easily-operated uncapping machine, that will do perfect work in one-half or one-third the time required with a knife? Such a machine would cost ten dollars."

We cannot answer for all, and therefore give any one a chance to answer the question. Perhaps the time has arrived for a machine to be invented. If so, it will be done, for all good and useful inventions come in just the right time.

In the Controversy concerning "large and small hives," between the Messrs. Dadant and Mr. Hutchinson, we shall not interfere—they are well able to discuss the matter intelligently and thoroughly. We desire, however, to make a few remarks about the article appearing in our columns, instead of the *Review*. To refuse to publish an article from the Messrs. Dadant, or any prominent apiarists, is more unpleasant to an editor than it is to the writer of the article—but there are occasions and circumstances when such an unpleasant duty is to be performed.

Some four or five years ago we received an article from the most prominent and popular apiarist in America, and one of the best of men the world contains. It was very faulty, and full of unwise suggestions and notions, and we deemed it best, both for the author as well as apiarists generally, not to publish it, and we wrote him a private letter to that effect. It was an unpleasant matter to us, and "mortified" our friend and correspondent considerably—but time has shown that our judgment was correct. He was saved from the "mortification" which would have ensued, and is now glad that the article never was published!

We fully agree with brother Dadant, that an editor should be "impartial" in giving full latitude to both sides of every question, and we fully believe that it is the intention of all editors of bee-periodicals to do so, but they are "frail" like other men; they err in judgment (at least we realize that we do, and judge others by ourself); they make mistakes, and have to act "on the spur of the moment" in deciding many questions, which, on more mature consideration, would have reversed the decision.

It is best, generally, not to judge our brethren of the press too severely—in fact they need sympathy more than censure—charity rather than rebuke!

We feel quite certain that Bro. Hutchinson will gladly re-publish Bro. Dadant's article with his reply, for we know that they all have none but the most kindly feelings towards each other. "Let brotherly love continue," is sound advice, and applicable to all ages and under all circumstances.

Bee-Enemies are numerous, and Mrs. S. E. Sherman, of Salado, Texas, asks if martins are among the number of bee-catchers. King-birds are often called bee-martins, and we presume these are what our correspondent intends to ask about. They are very destructive to bees, but seem to prefer the drones.

A Supplement to the *American Apiculturist* for May is received. Mr. Alley occupies seven pages in an article on "Rearing Queens in Full Colonies without Depriving the Bees of their Queen." It seems many have been experimenting in this direction at the same time, and probably without a knowledge of each other's experiments. Truly, this is a grand age of development.

GLEAMS OF NEWS.

Small Hives.—On page 124, Mr. B. Taylor, a Minnesota bee-keeper having 200 colonies of bees, stated that he had secured 7 tons of honey in the last poor season, and credited his success to the small hives he was using, and offered to describe them and detail their management in the AMERICAN BEE JOURNAL. He has sent one of the hives to our Museum, and has this to say respecting it :

The bee-keeper, like the farmer, secures his harvest with a reaper—the hives and fixtures are his harvester; the log-gum is the ancient “sickle”; the box-hive is the “cradle”; and the movable-comb hive is the “self-raking reaper” of the apiarist. The needs of 1889 now demand the “self-binder.”

It must combine all the good points of all previous hives; must be cheap, and easy to make; suitable for breeding bees in summer, and keeping them safely in winter; convenient for hiving swarms, and moving in the home yard; and always ready and safe to move to out stations. It must be suitable to handle by whole hives, or by single frames, without any loose parts or complicated machinery; equally suitable for the securing of either comb or extracted honey, and to that end it must be capable of easy contraction, and of tiering up to any required height; with a bee-space, and no more, between the upper and lower frames of such tiered hives, whether with or without the queen-excluding honey-board between them.

Mr. Editor, I send you a sample hive that meets the above-mentioned needs. It is of the right size (1,000 inches of comb surface); the beveled rabbet of the top and bottom of the sides enables it to rest upon a plain bottom-board, and to have a plain, smooth board for a cover, without any $\frac{1}{2}$ -bee-spaces or other evils. The fixed frames give all the advantages of the closed-end frames, and the manner of suspending them in the hive avoids their faults, among which is, its inconvenience of handling by single frames.

I can remove a frame in any part of the brood-nest in this hive, with my naked fingers, without any prying or other force (after loosening the compressing screws), and return them with equal ease, without hearing the “bones” crack, as we do in returning other closed-end frames in a populous hive.

This frame is right for any depth, but you cannot reverse them. I once made them reversible, but soon found that, in the way I used them, the bees would build the combs solid in the frames, without reversing; and there is no other reason for reversing, as alternating secures all desirable ends.

I use the hives with two depths of frames, 8 inches inside for the full size, and $4\frac{1}{2}$ inches for the double ones. They are exactly alike, except as to depth; and the small size has its frames suspended on a plain rabbet, as I do not expect to handle single frames much in this size. I use them large and small, in about the same way, and sometimes the two sizes together. I am as yet undecided as to which size is best, if but one was used; but I think I shall use the small size in the home bee-yard, and the large size in the out apiaries.

I do not claim anything new in this hive, only old things in new and improved ways. I am just finishing 300 hives, and 600 cases, for my own use the coming season, so it will be seen that I intend to get some honey, if there is any around.

With the editor's permission, in a future article, I will detail my way of using these

hives, and handling my bees in these three ways, viz: with fair increase, with small increase, and without any increase.

I see that nearly all bee-keepers object to any kind of glass in supers. I shall offer no apology for the peep-hole in my hive. Others may remove a shade-board with its 15-pound stone every time they take a squint at the bees; but I will see all I need to know in ten hives, while they are uncovering one.

Mr. Taylor does not describe his management in the above, but promises it in another article. That is more like what was wanted—the key to the production of the “seven tons of honey in a poor season,” would interest our readers much more than a description of the hive.

For all that we can discover, the hive is practically the same as other shallow hives, and has a wood and zinc slatted honey-board. It seems strange that he should have been using it for eight years, and yet at least two very similar ones have been invented and patented within the past three years.

This article is very appropriate under the heading of “Gleams of News.”

Laying Workers.—Thos. M. Pierce, of Wickford, R. I., asks for information, and writes as follows:

Last fall I united 2 good colonies, and left the queens to settle their own claim; and this spring the hive contains a good, strong colony; but instead of a queen, a laying-worker. I do not know what to do. I have looked into all the books, etc., I have, and cannot make up my mind what to do. The thing is quite a conundrum to me. I am sure it is a laying-worker, as many cells contain three eggs, and the brood is in all frames, a few here and a few there. Young, small drones are running around on the comb, queen-cells are started, but the cells are never capped, as the grubs all die after a few days. All the capped brood in the worker-cells is rounded up like drone-brood, if anything more so.

The conundrum can be solved in about as good a way as any, by breaking up the colony, giving a frame or two to weak colonies to build them up. It would be difficult to get those bees to accept a queen while having these annoying pests—laying workers.

Nurserymen.—The Fourteenth Annual Meeting of the American Association of Nurserymen will begin at Chicago, Ills., June 5, 1889. Railroad tickets for the round trip, from any part of the United States and Canada, may be secured by any person, whether a nurseryman or not, at a rate of one-third fare for the return trip; a great opportunity for all who would like to visit the great metropolis of the West. Tickets are good for any train, going or returning; no crowd, no jam. Reduced rates are also secured at the Grand Pacific Hotel, Chicago, the head-quarters of the society.

This will be a notable gathering of distinguished nurserymen and horticulturists, and an interesting and instructive programme is offered. June 5 will be the most delightful season of the year for such an excursion—cool weather, delightful views, Nature adorned in her most attractive gar-

ments. For circular giving full particulars about securing reduced railroad fare, programme, etc., apply to Charles A. Green, Secretary, Rochester, N. Y.

Transferring Bees.—As many are now inquiring how to transfer bees from box-hives, we give the following from the *American Agriculturist* for May—just received :

A good bee-smoker is needed so that you can have full control of the bees. They should be smoked thoroughly before operations begin, and at frequent intervals before attempting to open the old hive. This will allow ample time for them to fill themselves with honey, which they never fail to do if thoroughly smoked. Turn the hive bottom side up, and with a cold chisel and hammer pry open and cut the nails from two sides of the hive. This will lay the combs bare, so that they may be reached conveniently. Lay the frame to receive the combs flat upon a board which has been previously guttered out one-half by one-half inches on every two inches of surface. This will allow a wooden needle to pass under the comb after it is fitted into the frame. By this means a cord of hard twine is drawn over the comb and around the entire frame and securely tied, spanning the frame every two inches. After the combs have all been removed, cut, fitted and tightly bound into the frames, place them carefully into the new frame hive and raise the old hive, which contains the majority of the bees. With a brush of soft material, or a stiff feather, gently remove the bees into the new hive, or to its entrance. In arranging the combs, place those containing the brood in the center, and see that the brood occupies a compact mass in the hive. In a day or two the bees will have fastened the combs in the frames, and will ultimately remove the twine fastening. They cannot do this if wooden strips or tin fastenings are used. Only combs that are straight should be used; fill the remainder of the frames with foundation, which I would recommend rather than crooked combs, but combs containing brood should all be used.

Making Comb Foundation.—F. C. Erkel, of Le Sueur, Minn., asks these questions :

I keep 50 colonies of bees, and desire to secure all the white honey possible (such as basswood and clover) in the comb, and to extract the dark and autumn-flower honey. I have over 200 empty combs, and 10 combs in each of my 50 Langstroth hives; the combs were built from starters, so that they are not as straight as they might be, and have some drone-comb in them. 1. With that number of colonies, would it pay to have a foundation-mill for my own use? 2. If I had a mill of my own, would it be advisable to melt up those combs and use full sheets with wired frames? 3. If I had to buy foundation, would it be advisable to melt up the poorest of those combs?

1. We do not think it would pay to fuss with and make foundation for 50 hives, when the prices of it, already made, are as low as at present.

2. We should not advise the melting up of any good combs—but the “crooked” and black ones should go to the melting pot—substituting comb foundation for them, wired or not, as you choose.

3. Our advice would be the same, no matter whether you had a “mill” or not.

A Nebraska Apiary.

The engraving on this page represents one of the many excellent apiaries found in the State of Nebraska—a State which is rapidly taking its place among those noted for its fine apicultural productions. The following is written by Mr. J. M. Young, the owner of the apiary shown in the illustration :

The photograph from which this engraving was made, is a very correct one, and I wish that I could show a

bees for a great many colonies, at least as many as I can make profitable for one locality.

The large hives that are shown in the picture are the winter and summer chaff hives, the sides and ends of the lower story being packed with chaff when the hive is made. Since the first introduction of this hive, it has given excellent satisfaction in wintering.

The building in the background is the honey-house and work-shop combined. The upper part of the building is used principally for ripening extracted honey, the honey being packed in open vessels. The direct rays of

Chance for an American Girl.

The American girl may aspire to be Queen of England. Sir Edward Sullivan, who is a very serious Tory of the old Protectionist school, says so, and he is not to be confounded with Sir Arthur Sullivan, who sets Mr. Gilbert's nonsense romances to music. Prince Albert Victor, eldest son of the Prince of Wales, is 25, and his royal grandmother desires to see him married and settled; but there seems to be no eligible Protestant bride for him on the Continent, and those unreasonable Radicals in Parliament will be certain to make themselves disagreeable when



Apiary of Mr. J. M. Young.

better picture here; but the engraver has overlooked, and has changed, things about somewhat, and from this fact the illustration is faulty.

I now have the entire apiary and buildings removed from the old stamping ground (at Rock Bluffs) to a new location, $1\frac{1}{4}$ miles south of Plattsmouth. The hives are placed in their new location, as well as the building, in nearly the same way as they are seen in the engraving—in fact I have tried to make it about the same.

I hope some day to show a picture of my new location, as I have a very pretty site to work on; and as I have already put on a title for the new location—"The Home of the Honey-Bees," we intend to make it the home of the

sun keep this part of the room of a heated temperature, and for ripening honey, I would desire nothing else better than this arrangement.

The engraver has put foliage upon the trees (which are fruit-trees), and makes it appear to the eye that the photograph was taken during the season when the leaves were on the trees; but it was taken during the fall, when all vegetation appeared winter-like.

A Modern Bee-Farm and its Economic Management, by S. Simmins, of Rottingdean, Brighton, England, is the title of a new book of about 200 pages, printed on excellent paper, and nicely bound in cloth. Price \$1.00. For sale at this office.

the question of settlements is raised in that body.

So the suggestion is offered in good faith by Sir Edward Sullivan, as appears from our cable letter, that he shall marry an American, and thereby promote an era of good fellowship between the two great branches of the English-speaking race. This is highly complimentary to the typical American girl, who may be pictured as blushing coyly at the novel idea.

Then there are doubtless millionaires by the score who stand ready to relieve an English Ministry of any and all financial embarrassments by dispensing entirely with Parliament votes in supply.—*New York Tribune*.

MAY.

The finches are singing,
The bright bees are humming,
The grasses are springing,
The Summer is coming,

For May is here.
With sunshine and shadow,
Refreshing and cheering,
How green is the meadow!
Where daisies appearing,
As stars, shine out clear.

The tree-tops are swaying,
With nests on their branches;
The rabbits a-playing,
Or sit on their haunches,
As striving to hear
The church bells' far pealing,
Now swelling, now sinking,
Through the wood, the stream stealing,
Seems joyously thinking
Glad Summer is here.—Sel.

QUERIES & REPLIES.**How and When to Renew the Old Combs.***Written for the American Bee Journal*

Query 631.—1. What is the best procedure for the renewal of old combs in hives which bees have occupied for 12 or 15 years? 2. When is the best time for such procedure?

1. Use full sheets of foundation. 2. Any time from April to September.—
WILL M. BARNUM.

Cut them out before they are occupied with brood in the spring.—
J. P. H. BROWN.

1. The Heddon method of transferring. 2. About swarming time.—
C. H. DIBERN.

1. Remove them and render them into wax. 2. In early spring.—
J. M. HAMBAUGH.

1. Use sheets of foundation. 2. Any time, except during a good honey-flow.—
MAHALA B. CHADDOCK.

Transfer about the usual swarming-time, *a la Heddon*; as described in my "Manual," on page 219.—
A. J. COOK.

I have never had any combs too old in my apiary to be useful, and I have kept bees 20 years.—
G. M. DOOLITTLE.

1. If you are satisfied that they must be renewed, cut them out and fill the frames with foundation. 2. After you get all the brood out, in June or July.—
H. D. CUTTING.

I do not know that I fairly understand the question. 2. During fruit blossom, as a rule.—
J. E. POND.

1. Melt the old combs into wax, and give frames entirely filled with foundation. 2. In the spring—perhaps about the time of apple-bloom.—
MRS. L. HARRISON.

1. I do not know how to "renew" old combs. If it is desired to replace the old with the new ones, I should say

that the best method would depend upon how surplus honey is secured. If to be comb honey on the contraction plan, and swarms are hived on empty frames with starters, and a queen-excluding honey-board is used, new combs will be secured. If the surplus is to be extracted honey, furnish the surplus frames with full sheets of foundation. 2. When securing surplus.—
A. B. MASON.

I never renew them on account of age alone; but probably the best way to renew them is to melt them up, and replace with worker foundation.—
C. C. MILLER.

1. I am not certain that they *ought* to be renewed. 2. If you are sure that they are worthless, select the time when they have the least honey and brood in, which would be in April or May.—
EUGENE SECOR.

1. Take them out and replace them with new *worker* combs, or with comb foundation. But we would not remove them unless *very, very old* and thick. As long as the queen breeds in them, they are as good as new combs. 2. The best time is spring—April or May.—
DADANT & SON.

1. If you must renew them, take out one or more at a time, as you can find them empty, and replace them by putting frames filled with foundation in the brood-nest as needed. 2. Such as you find empty, may be taken out at any time when bees can fly, but frames of foundation should only be put in when some honey is coming in.—
R. L. TAYLOR.

1. My plan is to work out the old combs gradually at any time that it can be done with the least labor to myself, and disturbance to the labor of the bees. I sort out many poor combs in the spring, and many when making up nuclei for queen-rearing.—
G. W. DEMAREE.

1. Drive or shake the bees upon foundation, and after the brood in the old combs has emerged, shake these new bees into the same hive with the others, and melt the combs into wax. 2. Any time when the combs have but little honey.—
J. M. SHUCK.

1. Combs that have been occupied for 12 or 15 years do not need to be renewed. I would not care to use them more than 40 years, however. 2. If portions of them, from being moldy or from any other cause, become unfit for brood-rearing, they may be cut out at almost any time that may be convenient.—
M. MAHIN.

1. Place them in the supers of hives, if they contain brood, till it hatches out; then extract the honey and melt up the combs. In renewing, take out alternate combs, and insert frames

with full sheets of foundation till all the combs are renewed. 2. The above procedure may be carried out at any time in the season.—
G. L. TINKER.

Exchange the frames of old combs (if they *must* be renewed) for frames filled with comb foundation. It can be done best in the spring, about the time of fruit-bloom.—
THE EDITOR.

Central Michigan Convention.

—**W. A. Barnes**, of DeWitt, Mich., the Secretary of the Association, sends the following report:

The Central Michigan Bee-Keepers' Association met in the Supreme Court Room on Wednesday, May 1, 1889, and the election of officers resulted as follows; President, Rev. J. H. Ashworth, of Lansing; Vice-Presidents, S. E. Vanner, of Williamston, Miss Minnie Brindle, of Bath, and W. O. Wilson, of Okemos; Secretary, W. A. Barnes, and Treasurer, N. U. Goodnoe, of Lansing. The convention adjourned to meet with the State Bee-Keepers' Association next fall.

A Queer Hive.—**Mr. E. L. Dickinson**, of Central Point, Calif., writes to the Pacific Rural Press this item, under the above caption:

A very novel and curious bee-hive was discovered recently at Dutch Corners. It consisted of a straw-burning engine, which a swarm of bees had taken possession of as their home. Every attempt to dislodge them had failed. The engine was stored in an open shed, facing the road; hence it was very desirable to get rid of the bees.

The proprietor of the Dutch Corners hotel, offered me the bees if I would take them. Accordingly I went at it, and in a few minutes had them safely hived in a box. I moved them 80 miles, and set them up. On being liberated they immediately went to work.

There were in the engine about 14 pounds of honey of a very fine flavor, and nearly pure white, from alfalfa, of which there were large fields near by. The means of capturing them was simply smoke and water. After capturing, I found the queen and clipped her wings, and all trouble was over.

Scientific Queen-Rearing.—as practically applied; being a method by which the best of queen-bees are reared in perfect accord with Nature's ways. This is the title of a new book of 176 pages, by G. M. Doolittle, of Borodino, N. Y., which is now ready for delivery.

In this book Mr. Doolittle details the results of his experiments in rearing queen-bees for the past four or five years, and is the first to present his discoveries to the world. It is published in time for every progressive bee-keeper to test the various discoveries which it details, during the present season. Send all orders for the book to this office. Price, \$1.00, postpaid. The usual discount to dealers in lots of 10 or more.

CORRESPONDENCE.

BROOD-CHAMBERS.

Size of the Brood-Chamber—or Large vs. Small Hives.

Written for the American Bee Journal
BY CHAS. DADANT.

I desire to review the criticism written by Mr. Hutchinson, in the April number of the *Bee-Keepers' Review*, on Chapter IV of the "Langstroth Revised."

I write this article for the AMERICAN BEE JOURNAL instead of sending it to Mr. Hutchinson, because he refused to publish an answer that I sent him about one year ago. As my present criticism will bear on the same question—"the size of the brood-chamber"—I do not wish to expose myself to the same (to me) unusual mortification.

According to my notions, the publisher of a periodical devoted to improvements is bound to give, with the largest possible impartiality, both sides of every question. When he favors the writers whose views are identical with his own, by refusing or shortening the articles opposed to his ideas, or when he takes only a few words from a paragraph, to condemn what his opponent says, he is deficient in impartiality, which, to my mind, is the first quality indispensable to a reliable editor.

In his review of this chapter of our book, Mr. Hutchinson, after writing that, "through the chapter runs a vein of opposition to small hives," has omitted to quote several points given in our plea in favor of large ones—in fact he discarded every one of them!

For instance, he quotes thus from our book: "The harvest is in proportion to the number of bees in the hive;" and he starts from this member or phrase, to assert that it is of no matter whether the same number of bees is in one or in more hives. He does not copy one word on the causes of our preference, as given in the same paragraph, which reads thus:

"309. As the harvest of honey is always in proportion to the number of bees in the hive, and as a large colony requires no more labor from the apiarist than a small one, the hive should afford the queen sufficient space to deposit all the eggs which she is able to lay during 21 days, the average time for an egg to be transformed into a worker. Besides, it should contain a certain amount of food, honey and pollen."

The part of the paragraph omitted implies that if we have 100,000 bees,

on the average, in one of our large hives, or one million in ten, we will get as much honey, with far less work than if the same number of bees is divided into twenty small colonies. As such theorem cannot be disputed, Mr. Hutchinson has deemed prudent not to mention it.

A little further on he writes that, "a large hive is more expensive than a small one." Nobody will deny it. But, if our large hive contains twice as many bees as his small one, our outlay is smaller, since our hive costs less than two small ones; even without putting in account the cost of queens, for he affirms "gravely" that they cost practically nothing to the bee-keeper; and without reckoning the extra number of empty hives required to receive the more numerous swarms that his small hives will not fail to give.

He does not contest that bees in large hives swarm less than in small ones; but he adds that they will swarm enough to need an attendant. How does he know that such is the fact? Did he ever try our system and our capacious brood-chamber? No! Never! For more than 15 years we have dispensed with watching the bees of our home apiary, numbering from 80 to 100 colonies. As the yearly number of natural swarms does not exceed two or three, the expense of such watching would be far above the profit.

He continues: "If the hives are too large, some of the queens will fail to fill all the combs with brood, leaving from \$1.00 to \$2.00 worth of honey in the outside combs as dead capital." He passes directly over our anticipated answer to this objection, in the following paragraph, 310, in which he did not fail to read, "This space must allow of contraction, according to the needs of the colony, by what is called 'movable division-boards.'" Besides, I could add that while we can reduce the capacity of our large hive, he cannot increase the size of his small one.

Mr. Hutchinson seems to be opposed to a great prolificness in queens, for he avoided to mention that, according to our idea, one of the qualities of large brood-chambers is to enable the bee-keeper to discern which of his queens are the most prolific, to be selected as breeders, to improve his bees; while such selection is impossible with small hives.

He adds that "he is surprised to see us assert that the honey-board has been discarded of late years." What we wrote is far from being so peremptory, for we said this:

"352. The oil-cloth, or enameled cloth, first applied to hive purposes by R. Bickford, is used over the brood-frames in the spring. It fits closely, concentrates the heat, and can be re-

moved without jar or effort. When the surplus arrangement, or upper story, is put on, this cloth is removed and placed at the top. All apiarists, or nearly all, who have tried the oil-cloth and honey-board simultaneously, have discarded the latter forever, except in some cases of comb-honey production, when a skeleton honey-board is used between stories."

At last he writes: "In closing the chapter on hives, beginners are cautioned to be very careful in buying patent hives. Why, we ask, any more caution when investing in a patent hive, than in one unpatented?" I wonder why Mr. Hutchinson asks for an answer to this question. He can read it in the same paragraph, of which he took, as before, just what he intended to condemn, avoiding to quote our motives, for we wrote as follows:

"358. More than 800 patents on beehives and implements have been issued in the United States since January, 1873. Not ten of these have proved to be of any use to bee-keepers. The mention of this fact will suffice to show the small value of these 790 patents, and the loss incurred by those who have bought them before they were able to judge of their merits."

I may add that the buyer of a patent has to pay a royalty for the right of use, and that hundreds of beginners were victimized by patent venders, in paying for worthless implements which sometimes proved to be even real nuisances.

To sum up the criticism of Mr. Hutchinson: In perusing it, nobody could form a correct idea of our views, since it does not contain a word on the causes of our preference for large hives; although we wrote that it is based on a successful practice of more than twenty years, with several hundred colonies in different sized hives, used in producing comb and extracted honey; and although we quote reports from several noted bee-keepers of Europe, who praise the large hives, and have discarded their small ones, after serious comparative experiments.

Our friends, Newman and Root, can say that for years, the hives which are the most recommended by the editors, and the most advertised by the hive manufacturers, in the bee-papers published in the French language, have very large brood-chambers; some of them, such as the Layens, having it even more capacious than ours; while none of our opponents, Mr. Hutchinson himself included, can bring anything forward but their preconceived ideas.

We would be glad to see our book reviewed and criticized, since controversies would help us in redressing

MAY.

The finches are singing,
The bright bees are humming,
The grasses are springing,
The Summer is coming,
For May is here.

With sunshine and shadow,
Refreshing and cheering,
How green is the meadow!
Where daisies appearing,
As stars, shine out clear.

The tree-tops are swaying,
With nests on their branches;
The rabbits a-playing,
Or sit on their haunches,
As striving to hear
The church bells' far pealing,
Now swelling, now sinking,
Through the wood, the stream stealing,
Seems joyously thinking
Glad Summer is here.—Sel.

QUERIES AND REPLIES.**How and When to Renew the Old Combs.***Written for the American Bee Journal*

Query 631.—1. What is the best procedure for the renewal of old combs in hives which bees have occupied for 12 or 15 years? 2. When is the best time for such procedure?—Iowa.

1. Use full sheets of foundation. 2. Any time from April to September.—WILL M. BARNUM.

Cut them out before they are occupied with brood in the spring.—J. P. H. BROWN.

1. The Heddon method of transferring. 2. About swarming time.—C. H. DIBERN.

1. Remove them and render them into wax. 2. In early spring.—J. M. HAMBAUGH.

1. Use sheets of foundation. 2. Any time, except during a good honey-flow.—MAHALA B. CHADDOCK.

Transfer about the usual swarming-time, *a la Heddon*; as described in my "Manual," on page 219.—A. J. COOK.

I have never had any combs too old in my apiary to be useful, and I have kept bees 20 years.—G. M. DOOLITTLE.

1. If you are satisfied that they *must* be renewed, cut them out and fill the frames with foundation. 2. After you get all the brood out, in June or July.—H. D. CUTTING.

I do not know that I fairly understand the question. 2. During fruit blossom, as a rule.—J. E. POND.

1. Melt the old combs into wax, and give frames entirely filled with foundation. 2. In the spring—perhaps about the time of apple-bloom.—MRS. L. HARRISON.

1. I do not know how to "renew" old combs. If it is desired to replace the old with the new ones, I should say

that the best method would depend upon how surplus honey is secured. If to be comb honey on the contraction plan, and swarms are hived on empty frames with starters, and a queen-excluding honey-board is used, new combs will be secured. If the surplus is to be extracted honey, furnish the surplus frames with full sheets of foundation. 2. When securing surplus.—A. B. MASON.

I never renew them on account of age alone; but probably the best way to renew them is to melt them up, and replace with worker foundation.—C. C. MILLER.

1. I am not certain that they *ought* to be renewed. 2. If you are sure that they are worthless, select the time when they have the least honey and brood in, which would be in April or May.—EUGENE SECOR.

1. Take them out and replace them with new *worker* combs, or with comb foundation. But we would not remove them unless *very, very* old and thick. As long as the queen breeds in them, they are as good as new combs. 2. The best time is spring—April or May.—DADANT & SON.

1. If you must renew them, take out one or more at a time, as you can find them empty, and replace them by putting frames filled with foundation in the brood-nest as needed. 2. Such as you find empty, may be taken out at any time when bees can fly, but frames of foundation should only be put in when some honey is coming in.—R. L. TAYLOR.

1. My plan is to work out the old combs gradually at any time that it can be done with the least labor to myself, and disturbance to the labor of the bees. I sort out many poor combs in the spring, and many when making up nuclei for queen-rearing.—G. W. DEMAREE.

1. Drive or shake the bees upon foundation, and after the brood in the old combs has emerged, shake these new bees into the same hive with the others, and melt the combs into wax. 2. Any time when the combs have but little honey.—J. M. SHUCK.

1. Combs that have been occupied for 12 or 15 years do not need to be renewed. I would not care to use them more than 40 years, however. 2. If portions of them, from being moldy or from any other cause, become unfit for brood-rearing, they may be cut out at almost any time that may be convenient.—M. MAHIN.

1. Place them in the supers of hives, if they contain brood, till it hatches out; then extract the honey and melt up the combs. In renewing, take out alternate combs, and insert frames

with full sheets of foundation till all the combs are renewed. 2. The above procedure may be carried out at any time in the season.—G. L. TINKER.

Exchange the frames of old combs (if they *must* be renewed) for frames filled with comb foundation. It can be done best in the spring, about the time of fruit-bloom.—THE EDITOR.

Central Michigan Convention.

W. A. Barnes, of DeWitt, Mich., the Secretary of the Association, sends the following report:

The Central Michigan Bee-Keepers' Association met in the Supreme Court Room on Wednesday, May 1, 1889, and the election of officers resulted as follows; President, Rev. J. H. Ashworth, of Lansing; Vice-Presidents, S. E. Vanner, of Williamston, Miss Minnie Brindle, of Bath, and W. O. Wilson, of Okemos; Secretary, W. A. Barnes, and Treasurer, N. U. Goodnoe, of Lansing. The convention adjourned to meet with the State Bee-Keepers' Association next fall.

A Queer Hive.—Mr. E. L. Dickinson, of Central Point, Calif., writes to the Pacific Rural Press this item, under the above caption:

A very novel and curious bee-hive was discovered recently at Dutch Corners. It consisted of a straw-burning engine, which a swarm of bees had taken possession of as their home. Every attempt to dislodge them had failed. The engine was stored in an open shed, facing the road; hence it was very desirable to get rid of the bees.

The proprietor of the Dutch Corners' hotel, offered me the bees if I would take them. Accordingly I went at it, and in a few minutes had them safely hived in a box. I moved them 80 miles, and set them up. On being liberated they immediately went to work.

There were in the engine about 14 pounds of honey of a very fine flavor, and nearly pure white, from alfalfa, of which there were large fields near by. The means of capturing them was simply smoke and water. After capturing, I found the queen and clipped her wings, and all trouble was over.

Scientific Queen-Rearing. as practically applied; being a method by which the best of queen-bees are reared in perfect accord with Nature's ways. This is the title of a new book of 176 pages, by G. M. Doolittle, of Borodino, N. Y., which is now ready for delivery.

In this book Mr. Doolittle details the results of his experiments in rearing queen-bees for the past four or five years, and is the first to present his discoveries to the world. It is published in time for every progressive bee-keeper to test the various discoveries which it details, during the present season. Send all orders for the book to this office. Price, \$1.00, postpaid. The usual discount to dealers in lots of 10 or more.

CORRESPONDENCE.

BROOD-CHAMBERS.

Size of the Brood-Chamber—or Large vs. Small Hives.

Written for the American Bee Journal
BY CHAS. DADANT.

I desire to review the criticism written by Mr. Hutchinson, in the April number of the *Bee-Keepers' Review*, on Chapter IV of the "Langstroth Revised."

I write this article for the AMERICAN BEE JOURNAL instead of sending it to Mr. Hutchinson, because he refused to publish an answer that I sent him about one year ago. As my present criticism will bear on the same question—"the size of the brood-chamber"—I do not wish to expose myself to the same (to me) unusual mortification.

According to my notions, the publisher of a periodical devoted to improvements is bound to give, with the largest possible impartiality, both sides of every question. When he favors the writers whose views are identical with his own, by refusing or shortening the articles opposed to his ideas, or when he takes only a few words from a paragraph, to condemn what his opponent says, he is deficient in impartiality, which, to my mind, is the first quality indispensable to a reliable editor.

In his review of this chapter of our book, Mr. Hutchinson, after writing that, "through the chapter runs a vein of opposition to small hives," has omitted to quote several points given in our plea in favor of large ones—in fact he discarded every one of them!

For instance, he quotes thus from our book: "The harvest is in proportion to the number of bees in the hive;" and he starts from this member or phrase, to assert that it is of no matter whether the same number of bees is in one or in more hives. He does not copy one word on the causes of our preference, as given in the same paragraph, which reads thus:

"309. As the harvest of honey is always in proportion to the number of bees in the hive, and as a large colony requires no more labor from the apiarist than a small one, the hive should afford the queen sufficient space to deposit all the eggs which she is able to lay during 21 days, the average time for an egg to be transformed into a worker. Besides, it should contain a certain amount of food, honey and pollen."

The part of the paragraph omitted implies that if we have 100,000 bees,

on the average, in one of our large hives, or one million in ten, we will get as much honey, with far less work than if the same number of bees is divided into twenty small colonies. As such theorem cannot be disputed, Mr. Hutchinson has deemed prudent not to mention it.

A little further on he writes that, "a large hive is more expensive than a small one." Nobody will deny it. But, if our large hive contains twice as many bees as his small one, our outlay is smaller, since our hive costs less than two small ones; even without putting in account the cost of queens, for he affirms "gravely" that they cost practically nothing to the bee-keeper; and without reckoning the extra number of empty hives required to receive the more numerous swarms that his small hives will not fail to give.

He does not contest that bees in large hives swarm less than in small ones; but he adds that they will swarm enough to need an attendant. How does he know that such is the fact? Did he ever try our system and our capacious brood-chamber? No! Never! For more than 15 years we have dispensed with watching the bees of our home apiary, numbering from 80 to 100 colonies. As the yearly number of natural swarms does not exceed two or three, the expense of such watching would be far above the profit.

He continues: "If the hives are too large, some of the queens will fail to fill all the combs with brood, leaving from \$1.00 to \$2.00 worth of honey in the outside combs as dead capital." He passes directly over our anticipated answer to this objection, in the following paragraph, 310, in which he did not fail to read, "This space must allow of contraction, according to the needs of the colony, by what is called 'movable division-boards.'" Besides, I could add that while we can reduce the capacity of our large hive, he cannot increase the size of his small one.

Mr. Hutchinson seems to be opposed to a great prolificness in queens, for he avoided to mention that, according to our idea, one of the qualities of large brood-chambers is to enable the bee-keeper to discern which of his queens are the most prolific, to be selected as breeders, to improve his bees; while such selection is impossible with small hives.

He adds that "he is surprised to see us assert that the honey-board has been discarded of late years." What we wrote is far from being so peremptory, for we said this:

"352. The oil-cloth, or enameled cloth, first applied to hive purposes by R. Bickford, is used over the brood-frames in the spring. It fits closely, concentrates the heat, and can be re-

moved without jar or effort. When the surplus arrangement, or upper story, is put on, this cloth is removed and placed at the top. All apiarists, or nearly all, who have tried the oil-cloth and honey-board simultaneously, have discarded the latter forever, except in some cases of comb-honey production, when a skeleton honey-board is used between stories."

At last he writes: "In closing the chapter on hives, beginners are cautioned to be very careful in buying patent hives. Why, we ask, any more caution when investing in a patent hive, than in one unpatented?" I wonder why Mr. Hutchinson asks for an answer to this question. He can read it in the same paragraph, of which he took, as before, just what he intended to condemn, avoiding to quote our motives, for we wrote as follows:

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We would be glad to see our book reviewed and criticized, since controversies would help us in redressing

errors; as we do not consider ourselves infallible, we are ever open to conviction; but we do not think we are too exacting in asking for honest impartiality in the criticisms.

Hamilton, Ills.

[Editorial comments will be found on page 307.—ED.]

DRONES.

The Importance of Rearing Good Drones, etc.

Written for the American Bee Journal
BY F. F. GRAVES.

The first honey was brought in today. The season is very early, the trees are leaving out, and the red maple is now fairly in bloom, and is secreting a little honey.

It has been said that the willows produce some honey, but I have never been able to find any in the flower, or see evidence of it in the hive. It affords quantities of good pollen, and the bees have brought in so much the past week, that I have been obliged to take out one or two frames from each hive, many being so full that they are unfit for use, and can only be melted up. This has been my experience for the past ten years; and if artificial pollen is necessary anywhere, it certainly is not in this locality.

For the past three or four weeks the weather has been very warm—no cold nights, and not a day for a month but what the bees have been out, consequently they are breeding very fast, and it is time that we are thinking, or doing, something about the strain of bees that we wish to breed from. We all know that race will tell, and the importation of queens into our apiaries has made a wonderful improvement in the prolificness, storing-qualities and fighting-propensities of our bees; and those who do not care to purchase queens to supersede old ones, and to introduce into new swarms, should begin at once to breed from the best they have, as the male has as much or more to do with the disposition or traits of the progeny as the female.

We should commence by selecting the most vigorous and desirable young mothers, and from them rear all the drones for the whole apiary. This can be done by giving such an one a full hive of bees. A good and safe way to do this is to give them, from any hive which can spare them, a few frames of hatching brood; then in the centre of the hive put one or two empty frames, in or near the middle of which are a few cells of drone-comb (anywhere from 100 to 200), and when the cells

are capped over, the frames should be given to such colonies as you do not wish to rear drones from, and the place in the first hive supplied with similar combs, until every hive has a supply of drones.

If at any time drone-eggs are found in a hive, it will be safe to take them away and give drone-brood in any stage, from the selected queen. To rear drones is a natural propensity, but any colony will be satisfied with its quota, let it come from what source it may. If this is practiced, and every hive examined once in two or three weeks, and the heads shaved off from all drone-brood not wanted, and the frames having scattered brood taken out and put into a hive, the entrance of which is protected by a drone-trap, then they can be disposed of as they come out. In this way we can have pure and vigorous males.

We have not heretofore paid enough attention to the most important part of breeding. Many of our apiarists are also poultry fanciers, who have gained a reputation as successful breeders; and I think that they all are more particular about the points of the male bird than they are of the mother. Why should we not be as particular about the character of the drone, as of the queen? It is of much greater importance, for the queen is reared under the swarming impulse; the egg is laid by a mother that is able to fill the hive with brood, and lead the swarm to seek a new home, while the drone may be the last egg laid by a decrepit old queen who has deposited her fifteen hundred thousand, and now has not enough energy or life to produce a fertilized egg, but is just laying from force of habit.

A queen is a queen only by accident; any one of the two or three thousand eggs that a queen lays in a day, may be made into a queen if circumstances require it; the difference only is a larger cell, and more stimulating and nutritious food. If that will change a worker into a queen, give her more strength, greater endurance, and also a lease of life, not of weeks, but of years—if all this is done by care and condition, why is not the drone equally affected?

Many of the drones that fly about the apiary were reared in colonies that were not able to take care of themselves, and were dying faster than the young bees hatched to take their places. In such hives the drone could not receive sufficient warmth in germination, proper care, nor enough of the requisite food to make a vigorous male, and his progeny would certainly suffer and be deficient of the qualities that make the best bees.

Waterville, Me., April 30, 1889.

SPRING.

The Management of Bees in the Spring.

Read at the Erie Co. Farmers' Institute
BY O. L. HERSHISER.

At no season of the year do bees need more careful management than during the first warm days of spring, and until they can gather honey from the fields. Losses are not usually heavy during the winter months, but from the latter part of March until fruit trees bloom, the fatality is sometimes great. It is not a difficult matter to winter bees, but to "spring" them successfully often requires much thoughtful attention to their needs and condition.

The first requisite is plenty of food. If this matter has not been looked to in the preceding autumn, preparatory to wintering, it should be on the first warm day of spring. Springs following years of failure of the honey crop, and especially failure of fall honey, are usually springs of heavy losses from starvation and dwindling. If each colony is provided with from 25 to 35 pounds of stores in the fall, they will in nearly every case have abundance to last until the flowers produce honey again.

A normal colony of bees will consume from 6 to 12 pounds of food from fall till April 1, and from this time till fruit trees bloom, about as much more. If they consume more than this, they are not in a normal condition, and are liable to perish. The less honey a colony consumes during the winter, the better will be its condition in the spring.

Feeding Bees in the Spring.

If bees are out of food, empty combs in the hive should be replaced by combs containing honey. If these are not accessible, syrup made from the best quality of granulated sugar may be fed. In feeding, be careful to allow as little loss of heat from the hive as possible. A strong colony will store several pounds of food a day.

A bee-feeder is desirable in feeding syrup. Some bee-keepers prefer to feed by replacing empty combs in the hive by combs containing sugar syrup. The combs are filled by laying them on a board and pouring the syrup into the cells with a dipper. They should be hung in the natural position and allowed to drip before placing in the hive. Feeding should always be done in the evening to guard against robbing.

If it is desirable to stimulate bees to rapid brood-rearing, a small amount should be fed daily, and the feeding

prolonged till the flowers yield honey. If bees have plenty of capped stores, brood-rearing can be greatly augmented by uncapping a part of the honey and place it back of a division-board. As often as the bees restore the honey, the operation may be repeated, until the bees can gather honey from the flowers.

Cleansing the Hives.

If many bees have died in the hive during the winter, they should be removed; this is easily accomplished if hives have loose bottom-boards. Get an extra bottom-board and exchange it for the bottom-board of the next hive, and so on. As nearly all the dead bees have fallen to the bottom-board, by scraping the latter you have pretty thoroughly cleansed the hive. This operation offers very slight disturbance to the bees, and it is but a moment's work to lift the hive and exchange bottom-boards.

If the hives have tight bottom-boards, or are in packing-cases, a part of the combs containing the fewest bees should be lifted out, and this portion of the hive cleansed; then move the remaining combs and bees to the clean side of the hive, and finish removing the dead bees, after which the combs first removed may be replaced.

If the hives are of the same pattern, and look alike, so that a change of hives will not confuse the bees, they may be cleansed by transferring the first colony into a clean hive, by simply lifting the combs and bees into the latter, and placing it in the position of the first hive; then scrape the hive just emptied, and transfer the next colony into it, and so on.

It is not always necessary to go through the operation of cleaning all the hives. If there are a few dead bees, the better plan is to allow each colony to clean its own hive. In the spring following a mild winter, during which the bees have had frequent flights, the hives will seldom contain many dead bees.

When there is an abundant crop of late fall honey, some colonies will store so much in the brood-chamber as to leave insufficient room for brood-rearing. Colonies left in this condition cannot increase rapidly in numerical strength. If the hive is overburdened with honey, some of the full combs should be exchanged for empty ones. Then by uncapping some of the remaining full combs, the honey will be rapidly transformed into brood. Uncapping the honey seems to create the impression among the bees that there is great demand for labor, and they consequently rear young bees as rapidly as possible to meet this apparent need. Thus these otherwise super-

fluous stores can be converted into full and strong colonies to gather the white clover and linden harvests when they come.

The matter of reducing the stores to the proper amount, should be looked to in the fall, and all honey, not needed for wintering, extracted. No more than 30 pounds of honey per colony should be left for wintering.

Queenless Colonies.

Very often colonies become queenless during the winter. As a rule it is poor economy to purchase queens early in the spring to re-queen them. If the colony is strong it may pay to re-queen. Queens in April are quite valuable, and usually cost about as much as an ordinary queenless colony is worth. If the queenless colony is strong, the better way would be to unite it with the weakest colony that has a good queen. The queen begins laying from the middle to the last of February, and the entire absence of eggs or larvae in a colony after the middle of March or first of April is sufficient evidence that they are queenless, or that the queen is worthless.

Queenless colonies are liable to be robbed by other bees during the first warm days of spring. The bees seem to lose courage by the loss of their queen, and submit to the robbers with little resistance. Robbing can be easily detected by the great number of bees flying to and from the hive that is being robbed, and by the fine bits of honey-comb and rubbish about the entrance of the latter.

Robbing—Uniting Colonies.

When it is found that a colony is being robbed, the entrance to the hive should be closed for 10 or 15 minutes, to allow the robbers to secure their load of honey, and then opened to allow them to fly away with it. The robber bees that have collected to enter the hive, may be kept away with smoke, while the robbers that have been confined are leaving. After the robbers are out, the entrance should be closed until evening, and then, if queenless, the bees united with another colony.

In uniting, reduce the number of combs in the colony with which you wish to unite the robbed colony, and remove the remaining combs and bees to one side of the hive, and confine them there with a division-board. Place the robbed bees in the remaining space in the hive on two or three combs containing sufficient honey to last them two or three days. All means of passage between the two divisions of the hive should be closed for two or three days, and during this time the robbed bees should not be allowed to fly.

After this confinement they will go together with little or no fighting, and very few bees will be lost by trying to find their old home. They may be brought together by lifting out the division-board and properly arranging the combs. They can also be united by drumming both colonies for ten minutes, keeping the entrance closed; this frightens them, and they fill themselves with honey, when they lose all disposition to fight. This is probably the better way, if the hives are alike, and the two colonies to be united are side by side. But if unlike, and some distance apart, the former method is the best.

Each colony should be confined in space according to its numerical strength. Remove empty combs and use a division-board to confine the bees to the proper space. They should have no more combs than they can cover in moderate spring weather.

In handling bees at this season of the year, care should be exercised that they do not "ball" and kill the queen. "Balling" the queen is a very singular and annoying peculiarity; the bees seem to blame the queen for any disturbance in the home, and often try to kill her when the hive is opened for manipulation. If you notice a little ball of bees about an inch or less in diameter, tightly clustered, you may be sure the queen is in the centre of it, and in danger of being stung or smothered. Get the bees away from the queen as soon as possible, by smoking or throwing the "ball" into water. When the queen is secured, she should be caged in the colony for 48 hours, when she may be safely liberated.

Bees should be manipulated as little as possible. Sufficient food to last until fruit-trees bloom in the spring should be provided in the fall, so that no manipulation of the hive will be necessary until settled warm weather in the spring.

Bees will generally take care of themselves in the winter, if well prepared in the preceding autumn; but a few hours attention in the spring is well spent time, and may result in saving good colonies from starvation and dwindling, so that a few weeks later they will yield a handsome profit.

Big Tree Corners, N. Y.

Always Mention your Post-Office, County and State when writing to this office. No matter where you may happen to be for the hour when actually writing—never mention anything but your permanent address. To do otherwise leads to confusion, unless you desire your address changed. In that case state the old as well as the new address.

BASSWOOD.**Wholesale Destruction of the Linden or Basswood Trees.**

*Written for the American Bee Journal
BY D. MILLARD.*

The following paragraph was taken from the news items of a late issue of a Michigan newspaper :

A. W. Slayton, of Tecumseh, the basswood lumber king, has now so big a business that he will have to travel 12,000 miles during 1889 to look after it. He has sixty mills, which are cutting basswood in 29 counties, and his freight bills run in the neighborhood of \$10,000 a year.

This shows conclusively that it is not the poor season alone that is making such inroads upon our surplus honey crop. Within the last 18 months, over 100 linden trees have been cut within easy reach of my bees. I have kept bees the greater portion of the time for over 40 years, and I have ever observed this, that whenever my bees were in anything like a fair condition, and with a good flow of nectar from the lindens, I never failed to get a good crop of surplus honey.

White clover usually furnishes a surplus, but a good yield from the lindens always insured me a full crop of this most beautiful and best of honey. I fear that unless something can be done to check the wholesale destruction of this most beautiful and useful of trees, that the profits of bee-keeping will become lessened to an extent that will cause many to abandon the pursuit.

Planting for Honey.

Much has been said and written of late, in regard to planting for honey; but I am thoroughly convinced that it never will pay to plant for honey alone. Buckwheat, which has a value aside from its nectar, pays well in favorable seasons. Mint is extensively raised in this vicinity, and pays well for the oil extracted therefrom. My bees worked on it very busily for some time last fall, but it seems to yield nectar very sparingly, and of a quality and color about identical with that of catnip. The best thing to do, I think, is to

Plant Linden Trees.

Laws have been enacted by many of the Northern States, with a view to the encouragement of tree-planting—not only on private grounds, but along the public thoroughfares, parks, etc.

In this State, owners of real estate are allowed to apply a portion of their highway tax in setting trees by the roadside, but I regret to say that very few embrace this opportunity to thus erect living monuments to their memory, and further add to the beauty of the country and the enjoyment of the

coming generations. If they would but do so, and but one-fourth of the trees thus set out and properly cared for were lindens, it would be but a few years ere this country might be truly a land flowing with "milk and honey."

If there is any profit in setting out trees for shade, there would certainly be a great profit in growing those that would yield honey as profusely as the lindens. They flourish best on low, rich soil, but will grow on almost any upland. If planted thickly in groves or with other timber, they grow slim, forming excellent timber; but if isolated, they branch out and become more stocky, and make beautiful shade-trees. The trunks furnish a nice white lumber that is of great value for manufacturing purposes.

The leaves and tender branches are readily eaten by any kind of farm stock, and as a honey-producing tree it has no equal. I have a row of them growing on two sides of my farm, and also several hundred in a nursery, nearly all of which blossomed the past season at a height of from 4 to 5 feet, being six years from the seed.

How to Grow Lindens.

To produce them in large quantities, the seed should be gathered in the fall and dried; then packed in boxes with alternate layers of sand, and buried just below the reach of frost. Plant in shallow drills in early spring, and give a light mulching to retain the moisture; keep the ground mellow and free from weeds, and you will get from 4 to 6 inches of growth the first season.

The following spring they should be transplanted into rows 18 inches apart, and 4 feet between the rows, and kept well cultivated throughout the entire season. The next spring each alternate shoot should be removed and placed 3 feet apart in rows, and 4 feet between the rows, and kept well cultivated during the forepart of the season; later give a mulching of partially rotted straw to retain the moisture, and keep down the weeds. At the end of the fourth year, the larger ones will do to take up and permanently re-set.

If only a few are wanted they can sometimes be found in the open timber where stock have not been allowed to run, as stock of any kind will keep them grazed down close to the ground. These can be transplanted the same as those grown from the seed.

I have no faith in trees grown from shoots, slips, or cuttings; they seldom make good trees, and are short-lived at best. Abundant evidence of this fact exists in apple orchards throughout the country. Seedling trees are frequently seen bearing heavy loads of fruit at any age that those grown from

root-grafts would have been long consigned to the brush pile. The re-setting from time to time causes them to grow more stocky, also more thickly rooted and hardy, enabling them to better withstand the change of final setting. The tops should be cut back and evened up to keep them in good shape, and assist in making them more stocky.

How to Set Out Lindens.

This can be done at any time after they have shed their leaves in the fall, but early spring is much to be preferred. Prepare the ground by plowing and cultivating it the season previous. Never set them out in hard ground or sod, and leave them to take care of themselves. They should be set in rows from 2 to 3 rods distant from each other, and cultivated for at least two seasons, after which the ground may be allowed to grass over.

Start Lindens by the Roadside.

First, it is presumed that there is no risk of damage from stock, as they should never be allowed to run at large in any civilized community. Next select a place where the adjoining field is to be used to grow corn the next season. Remove the old fence, plow and fit the ground as for a crop; the following spring set out the trees 7 feet from the road line, inside the highway. Plant corn alongside, and cultivate all together for the season.

The next season plant some root crop on either side of the row of trees, while the adjoining ground may be sown to oats or wheat. The third season, make the ground by the trees smooth by harrowing, and seed with Alsike clover, with about one-eighth part Kentucky blue-grass, or common June grass. This, in time, will form a sod after the Alsike runs out.

Next build a good iron fence on the road line, and you have made an improvement that will add greatly to the value of your farm, an everlasting beauty to the highway, and a source of profit through employment for your bees.

Mendon, Mich.

The International Bee-Keepers' Association will meet in the court-house, at Brantford, Ont., Canada, on December 4, 5, and 6, 1889. All bee-keepers are invited to attend, and State and District bee-keepers' societies are requested to appoint delegates to the convention. Full particulars of the meeting will be given in due time. Anyone desirous of becoming a member, and receiving the last Annual Report bound, may do so by forwarding \$1.00 to the Secretary.—H. F. HOLTERMANN, Sec., Brantford, Ont., Canada.

Money in Potatoes, by Mr. Joseph Greiner. Price, 25 cents, postpaid. This is a complete instructor for the practical potato-grower, and explains the author's new system in 40 interesting lessons. It is for sale at this office.

CONVENTION DIRECTORY.1889. *Time and Place of Meeting.*May 21.—Northern Illinois, at Pecatonica, Ills.
D. A. Fuller, Sec., Cherry Valley, Ills.

Dec. 4, 6.—International, at Brantford, Ont., Canada.

R. F. Holtermann, Sec., Brantford, Ont.

In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—ED.

**SELECTIONS FROM
OUR LETTER BOX**

Rolling in the Honey and Pollen.—E. E. Ewing, Rising Sun, Md., on May 6, 1889, says :

I have had two Carniolan swarms—one on May 4, and one on May 5. They were ready to swarm a week before they did, having capped queen-cells several days ago, and young queens ready to come out; but the weather was cold and windy. To-day it is fine, and the bees are rolling in honey and pollen. Apple-trees are in full bloom. The hybrids are only getting started to work fairly.

Early White Clover Bloom.—W. J. Cullinan, Quincy, Ills., on May 2, 1889, writes :

Fruit-trees have been blooming in this locality for about two weeks, but owing to the dry, cool weather prevailing, bees have not derived the benefit that they should therefrom. White clover began blooming here on April 28, the earliest date at which I ever heard of its blooming in this latitude. Now for warm, showery weather, and we still may be able to send in a "bright side" report a couple of months hence, as a sort of diversion from the gloomy ones of the last two years. Bees, where properly prepared, have wintered well.

Colonies in Good Condition.—Jos. L. Flint, Marion, Iowa, on April 23, 1889, writes :

My 5 colonies of bees came out of the cellar on March 25, all strong and in good condition, with plenty of stores and some sealed brood. They have been carrying pollen every warm day since then, and some days they carried it so fast that they dropped on the alighting-board by the half dozen, so that they could not be counted. We have had 1½ inches of rainfall, so that white clover is "booming," of which there is an abundance. The fruit-buds do not seem to be hurt by the winter frosts.

Working on Fruit-Bloom.—N. Staininger, Tipton, Iowa, on May 6, 1889, writes :

I have had no loss for three years in wintering. My bees came out in splendid condition this spring. I put them out about March 20. A few colonies were put in on Nov. 5, and taken out in April, being in 157 days; they lost 13 pounds each in weight, and came out in fine condition, there being not a spoonful of dead bees among them. I never saw bees so strong at this time of the year. To-day they were lying out like they do in the summer. They are doing nicely on fruit-bloom. The prospects are very good for a grand honey-season. I had plenty of drones flying in April, and I expect some swarms soon.

Good Crop Expected.—E. M. Showers, Pine Bluff, Wis., on April 22, 1889, says :

Never have my bees come through the winter better than the past winter. I had 22 colonies in the fall, and they are all right this spring. I wintered 14 colonies in the cellar, and 8 outside, in chaff hives, and the latter wintered the best. There are not many bees in this place. White clover does not look very promising, but there is a great deal of Alsike in this neighborhood, so I expect a good crop of honey this year.

Bees Doing Remarkably Well.

—A. S. Crotzer, Lena, Ills., on May 7, 1889, says :

One of my neighbors had a fine swarm of bees yesterday. How is that for Northern Illinois? I have never seen bees do so well at this time of the year as they are doing now.

[That is good enough. Yes, every indication now points to the best honey-season for many years past.—ED.]

The New Bee-Veil.—Mrs. L. Harrison, Peoria, Ills., writes thus concerning the "New Bee-Veil:"

"What is that, Mrs. Harrison, that you have just received by mail—that square box?" asked a lady visitor who was contemplating bee-culture. "A bee-veil," I replied; and she watched me button the springs on the neck-band, and adjust the veil. When it was completed, I put it over her head—"O, my," she said, "I like this so much better than that wire hat you put on me in the honey-house; it is so

light and airy." How crestfallen I was, to hear my wire gauze hat being cast in the "shade." It has so long been my joy and pride, and the more fun that was made of it, the more dearly I loved it; but now Thomas G. Newman & Son have eclipsed it entirely. "Light and airy" it certainly is, and a cool head-cap can be worn within it, when the mercury plays around the hundred in the shade. My objection to veils has been, that I could not protect my neck and chin, so but that bees could sting through; but these steel bows keep the veil so far away, that bees, mosquitoes and gnats are outwitted.

Only One Colony Lost.—C. H. Stordock, Durand, Ills., on April 17, 1889, says :

I finished carrying out my bees yesterday; and of the 102 colonies put into winter quarters, I took out 101 in good condition, though I may find a few queenless ones.

New Honey, etc.—John Boerster, Vashon, Wash. Ter., on April 29, 1889, says :

I think that bees will do well here this year. I have had 3 swarms from one colony already, one on April 19, one on April 22, and one on April 26; also 2 pounds of new honey from the same colony.

Dry Weather, etc.—Wm. B. Ray, Alaska, Wis., on May 6, 1889, says :

My bees have wintered well, although the month of April was cold and windy, and the first four days of May was cold; but the bees are just boozing now, although it is very dry. We have had very little rain within two months, and no snow to speak of. The last season was not as good for honey as the season before, and if we do not get rain soon, our prospects for this season will not be very good.

Evolution.—Dr. C. C. Miller writes thus concerning the discussion of this subject :

Mr. Editor, with your permission, I will allow Mr. Latham's article on page 282 to end the controversy between us. If I ever happen around at Cumberland, Me., I may ask him to explain some things to me; but I do not believe it is best to take any more room in the AMERICAN BEE JOURNAL. All the same, I hope he will rear the best kind of queens.

Early Swarming—Storing the Honey.—J. M. Young, Plattsmouth, Nebr, on May 3, 1889, writes :

The past winter has been so mild in Nebraska that bees have come through safely, and colonies are very strong in bees. I had the first natural swarm to-day. Who can report earlier swarming than this, in this latitude? My bees since my removal have been doing finely, and are storing considerable honey—sufficient to keep brood-rearing under good headway, and the hives are now full of brood. There are several large orchards near, from which the bees are getting their honey. The fruit bloom is good.

Good Prospects for 1889.—Frank A. Eaton, Bluffton, O., on May 4, 1889, says :

Bees are doing finely here, and I can report my first swarm—a fine prime Italian—this morning. Plenty of drones are flying. Prospects are good for a fine crop of honey.

Foggy Weather, etc.—Mr. Levi Reichard, Ellison Bay, Wis., on May 1, 1889, says :

I lost 3 colonies the past winter, and saved 4. We had a very poor season in 1888, and now there is so much foggy weather that the bees cannot fly much, but when they can fly, they are very busy on May flowers, willow and poplar, which abound here. The trees are not yet in leaf, but the buds are just ready to burst open.

Old Colonies of Bees, etc.—J. S. Barb, Bristolville, O., on May 3, 1889, writes :

Bees have not wintered the best throughout this vicinity—lack of honey being the main cause, and so much warm weather during the forepart of the winter, another cause, as the bees consumed a good deal more honey than they otherwise would. The last was a very poor honey season here, as it was too wet, and the two seasons before that were too dry. The prospect for a good honey crop the coming season is very good, as there is an abundance of white clover, and considerable Alsike clover raised; also, there is much basswood here, which will help the bees a little.

Some three or four years ago I wrote about an old colony of bees that I have in a very large box-hive, which I called the "Old Pioneer." Well, this colony is still alive, and in good condition. It

was put into this hive on June 20, 1870, and has stood all the hard winters that we have had since then. It is from a stock of bees that was brought on this place by my father in 1836. It has stood close to the wood-pile where we haul, cut, and split wood every winter. I have an old log gum that was brought to this farm with a swarm of bees in it, when my grandfather, Gabriel Barb, moved here, in 1821. My uncle, Mr. Sager, has a few colonies of bees that are of a stock of bees that were brought on the farm where he now lives, by his father, over 80 years ago.

I have a lot of frames of comb in good condition; would it be a good plan to hive swarms on them? If so, how many should I use for each swarm? How soon should I put sections on after hiving the swarm?

[You can use the old combs if they are in good condition for swarms—but we prefer to use comb foundation, and think nothing would be gained by using the old combs. Melt them up for the wax.—ED.]

Bees Wintered Poorly.—B. W. Peck, Richmond Centre, O., on May 4, 1889, writes :

I commenced the spring of 1888 with 45 colonies, increased them to 55, and took about 1,000 pounds of honey in one-pound sections. I have usually been successful in wintering bees, but on account of long confinement (from early in November until March 4) and black, inferior stores, I have lost 16 colonies out of the 55, leaving 39, and most of them are now in good condition. I expect a good honey season, and hope to make up my losses; I will try and do better next winter. Bees in this vicinity have wintered poorly; but 5 or 6 miles south of this place, bees wintered well.

Bees Doing Well in Texas.—A. W. Lamkin, Cotulla, Tex., on May 7, 1889, writes :

Bees here are doing well for the chance they have. I notice that a great many bee-keepers are trying the improved hive here; heretofore we have generally used dry-goods boxes, or gums cut from hollow-trees; or more frequently, just cut a bee-tree, get what honey that may be stored therein, and leave the bees to shift for themselves. This is a very thinly settled country, and few persons are trying to improve their bees. Those that have given their bees any attention, seem to do well with them. On April

27, I extracted from two hives (the property of Mr. D. M. Levels). I only extracted the top story of each (18 frames), and got 100 pounds of nice white honey. I have had quite a nice time this spring transferring about 30 colonies from dry-goods boxes—some of them had been in the boxes for three and four years; in some the comb had fallen down, and had lain in the box for a year or more. The outlook for honey here this year is good; grass and crops of all kinds look well, and all kinds of stock are fat.

Bees Doing Finely.—Dr. J. M. Hicks, Indianapolis, Ind., on May 4, 1889, writes :

Bees are doing finely in my new location. The State apiary has had two new swarms. The bees all wintered well, having lost none except by two-legged thieves, who relieved me of two of my best colonies during the winter, at my old home in Battle Ground, Ind. Honey is in good demand in my home trade here.

An Early-Rared Queen.—S. D. Haskin, Waterville, Minn., on May 7, 1889, says :

Tally one for Minnesota; for I have reared a queen this spring, which, on the first day of this month, was laying worker-eggs, all in good order, and bountifully. I think that the fertilization must have been by a drone reared in a worker-cell, for I had noticed a very few such (perhaps a half dozen) in one hive, and no other drones anywhere.

Carex or Sedge Grass.—J. M. Doudna, Alexandria, Minn., on April 27, 1889, writes :

Will you please name the sample of native grass that I send? It grows in the timber-lands, and yields a great amount of pollen; and blooms just after the willows and soft maples. Bees are in fine condition. I never had them winter better; most of them have from 5 to 8 frames of brood. They got the first pollen on April 6, from hazel. Last year the willows did not bloom until May 10.

The above was referred to Clarence M. Weed, of the Ohio Agricultural Experiment Station, who replies thus :

The "native grass" is a sedge of the genus *Carex*, and has been identified by Prof. L. H. Bailey, of Cornell University (our best authority on this group), as *Carex Pennsylvanica*.



ALFRED H. NEWMAN,
BUSINESS MANAGER.

Business Notices.

Your Full Address, plainly written, is very essential in order to avoid mistakes.

If You Live near one post-office and get your mail at another, be sure to give the address that we have on our list.

Give a Copy of "Honey as Food and Medicine" to every one who buys a package of honey. It will sell lots of it.

Dr. Miller's Book, "A Year Among the Bees," and the AMERICAN BEE JOURNAL for one year—we send both for \$1.50.

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Paper Boxes—to hold a section of honey for retail dealers. We have two sizes on hand to carry sections 4 $\frac{1}{4}$ x4 $\frac{1}{4}$ and 5 $\frac{1}{4}$ x5 $\frac{1}{4}$. Price, \$1.00 per 100, or \$8.50 per 1,000.

Preserve Your Papers for future reference. If you have no **BINDER** we will mail you one for 60 cents; or you can have one **FREE**, if you will send us 3 new yearly subscriptions for the BEE JOURNAL.

Please write *American Bee Journal* on the envelope when writing to this office. Several of our letters have already gone to another firm (a commission house), causing vexatious delay and trouble.

Honey.—We have for sale a quantity of Extracted Honey in kegs holding about 220 pounds each, which we are selling, free on board the cars, at 8 cents per pound for Amber and 9 cents per pound for White.

In order to pay you for getting new subscribers to send with your renewal, we make you this offer. For each yearly subscriber, with \$1.00, you may order 25 cents worth of any books or supplies that we have for sale—as a premium.

A Home Market for honey can be made by judiciously distributing the pamphlets, "Honey as Food and Medicine." Such will create a demand in any locality at remunerative prices. See list on the second page of this paper.

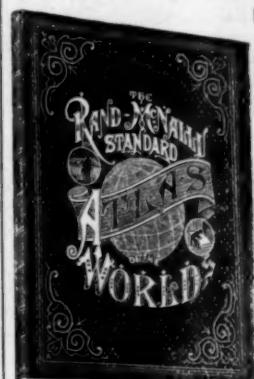
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	Size A.	Size B.	Size C.
250 Labels	\$1.50	\$2.00	\$2.25
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* Samples mailed free, upon application.

Hastings' Perfection Feeder.—This excellent Feeder will hold 2 quarts, and the letting down of the feed is regulated by a thumb-screw. The cap screws securely on. It is easy to regulate—either a spoonful or a quart—and that amount can be given in an hour or a day, as desired. By it the food can be given where it is most needed—just over the cluster. Not a drop need be lost, and no robber bees can get at it. A single one can be had for 40 cents, or a dozen for \$3.50, and it can be obtained at this office. Postage 10 cents extra.

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We Club the *American Bee Journal* for a year, with any of the following papers or books, at the prices quoted in the **LAST** column. The regular price of both is given in the first column. One year's subscription for the *American Bee Journal* must be sent with each order for another paper or book:

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Bee-Keepers' Advance	1.50	1.40
Canadian Bee Journal	2.00	1.80
Canadian Honey Producer	1.40	1.30
The 8 above-named papers	5.65	5.00

and Langstroth Revised (Dadant)	3.00	2.75
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Send Us the Names of bee-keepers in your neighborhood who should take and read the AMERICAN BEE JOURNAL, and we will send them a sample copy. In this way we may obtain many regular subscribers, for thousands have never seen a copy, or even know of its existence. This is one way to help the cause along.

Triple Lense Magnifiers have been so often called for that we have concluded to keep them in stock for our subscribers to inspect bees, insects, etc. See page 212.

Price, by mail, 80 cts.; or the BEE JOURNAL one year, and the Magnifier, for \$1.50.

Alfalfa Clover.—For cultivation of this honey-plant, see page 245, of 1888.—We supply the seed at the following prices: —Per lb., 22c.; per peck, \$3.00; per half-bushel, \$5.50; per bushel of 60 lb., \$10.00. If wanted by mail, add 10 cents per pound for bag and postage.

Clover Seeds.—We are selling *Alsike Clover Seed* at the following prices: \$8.00 per bushel; \$2.25 per peck; 25 cents per lb. *White Clover Seed*: \$10.00 per bushel; \$2.75 per peck; 30 cents per lb. *Mellot or Sweet Clover Seed*: \$6.00 per bushel; \$1.75 per peck; 20 cents per lb.—by express or freight.

Yucca Brushes, for removing bees from the combs, are a soft, vegetable fiber, and do not irritate the bees. We supply them at 5 cents each, or 50 cents a dozen; if sent by mail, add 1 cent each for postage.

Pure Phenol for Foul Brood.—Calvert's No. 1 phenol, mentioned in Cheshire's pamphlet on pages 16 and 17, can be procured at this office at 25 cents per ounce. Not being malleable, it must go by express.

Honey and Beeswax Market.**DETROIT.**

HONEY.—Best white 1-lbs., 14@15c. Market is dull and lower, but not overstocked. Demand slow.
BEESWAX.—22c@23c.
Apr. 30. M. H. HUNT, Bell Branch, Mich.

KANSAS CITY.

HONEY.—We quote: White 1-lbs., 15@16c.; dark, 16@17c.; California white 2-lbs., 11@12c.; amber, 10@11c. Extracted, white, 7@8c.; dark, 8@9c. Our market is in good condition for the new crop.
BEESWAX.—20c.
May 11. CLEMONS, CLOON & CO., cor 4th & Walnut.

ST. LOUIS.

HONEY.—Extracted, in barrels, 6@6@8c. Excellent demand for clear, bright in barrels.
BEESWAX.—22c. for prime.
May 4. D. G. TUTT & CO., Commercial St.

CHICAGO.

HONEY.—Our trade is light; no large lots on hand and what there is consists chiefly of dark comb, and not salable in quantities. Choic white comb, 1-lb. sections, 16@17c.; dark grades from 10@12c. Very little demand for extracted, but prices remain at 7@9c., according to quality and package.
BEESWAX.—22c.
Mar. 25. R. A. BURNETT,
161 South Water St.

DENVER.

HONEY.—White, in 1-lb. sections, 16@18c. Extracted, 7@10c.
BEESWAX.—18@20c.
Mar. 26. J. M. CLARK & CO., 1409 Fifteenth St.

MILWAUKEE.

HONEY.—We quote: Fancy white 1-lbs., 17@18c.; 2-lbs., 16@17c. Good dark 1-lbs., 15@16c.; 2-lbs., 14@15c. If damaged and leaky, 10@12c. Extracted, white, in barrels, 8@8@9c.; 1/2-barrels, 8@9c.; amber, same, 7@7@8c.; in pails and tin, white, 9@9@9c.; in barrels and 1/2-barrels, dark, 6@6@7c. The demand is fair.
BEESWAX.—20@22c.
Mar. 27. A. V. BISHOP, 142 W. Water St.

NEW YORK.

HONEY.—Market is bare of comb, except some small lots of buckwheat which is selling at from 10@12c. No buckwheat extracted. Cuba and San Domingo extracted, 67@70c. per gallon.
BEESWAX.—24c.
Mar. 25. HILDRETH BROS. & SEGELEN,
28 & 30 W. Broadway, near Duane St.

BOSTON.

HONEY.—We quote: Best white clover 1-pounds, 18@20c.; best 2-lbs., 17@18c. Extracted, 8@8c. Sales have been checked a little on account of maple sugar and syrup being so plentiful. Sales of honey are very slow.
Apr. 28. BLAKE & RIPLEY, 57 Chatham Street.

CINCINNATI.

HONEY.—We quote extracted at 5@8c. per lb. Best white comb honey, 12@15c. Demand is slow, and prices low.
BEESWAX.—Demand is good—20@22c. per lb. for good to choice yellow, on arrival.
Mar. 21. C. F. MUTH & SON, Freeman & Central Av.

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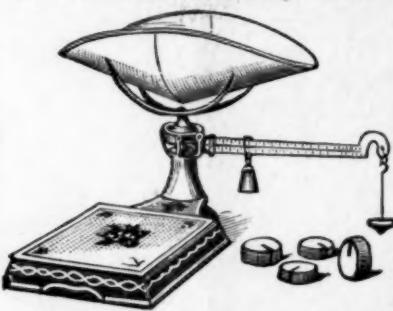
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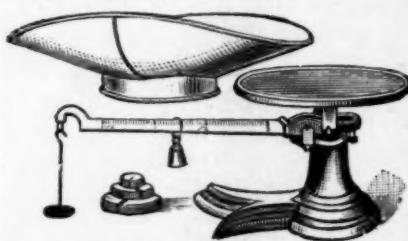
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